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AUTHOR	Willis, E. Anne; Ricciuti, Henry N.
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ABSTRACT

This longitudinal study was concerned with infants' reactions to being greeted by a caregiver upon arrival at the nursery, being left by the parent with the caregiver, and to reunion with the parents. Observations were made twice weekly in the natural setting of the nursery foyer where parents normally arrive with their infants. An affectivity scale included in the appendix was used to rate infants' reactions. Subjects were 7 girls and three boys who were assigned to three groups: four half-day older infants whose mean age at entry into day care was 5.1 months; three full-day babies whose average entry age was 4.7 and three full-day younger babies whose average entry age was 2.7. Study findings tended to support the critical importance of stability and continuity in the people giving care to babies outside the home. Entry into day care at a younger age and a shorter daily separation are indicated as factors which may facilitate the baby's daily adjustment to day care. (MS)

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LONGITUDINAL OBSERVATIONS OF INFANTS' DAILY ARRIVALS AT A DAY CARE CENTER[1]

E. Anne Willis and Henry N. Ricciuti

A Technical Report

from the

Cornell Research Program

in

Early Development and Education

Department of Human Development and Family Studies
New York State College of Human Ecology
A Statutory College of the State University
Cornell University
Ithaca, New York 14850
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INTRODUCTION

One of the important issues relating to day care for very young children is that of the effects of extended experience with caregivers other than the natural parents, specifically on the relationship between the infant and the mother. There has been some concern that repeated separation from mother to a day care setting early in life may make the infant insecure with regard to the affectional bond or attachment relationship with his parents. Many people concerned with program planning have stressed the importance of having stability and continuity in the alternate caregivers, in the interest of ensuring trust and security in the infant (e.g., Willis and Ricciuti, 1974). This stability provides the opportunity for the caregiver to become an important attachment figure in addition to the parents, particularly if infant and caregiver spend much time together.

Another advantage of stable caregivers is that they can ease the daily transition from home to day care center, thus making it easier for the infant to adjust to a new situation.

Several groups of investigators have recently looked at the effects of repeated separations involved in day care experience on the attachment relationship of mothers and their very young children. Caldwell et.al. (1970) found essentially no differences on measures of affiliation, nurturance, hostility, happiness, and emotionality when they compared two groups of 30 month old children, one having had extended group care experience, the other cared for at home by the mother. The investigators concluded that day care experience had not adversely influenced the mother-child attachment relationship. Blehar (1973) looked at the effects of experience in day care on the young child's ability to separate from the mother, looking at reactions

both at the time of separation and upon reunion with the mother. She found evidence of disturbed mother-child attachment relationships in two and three year olds who had been in day care for at least five months. In comparison with home reared controls, the children in day care showed more distress during separation, and searched more for the mother during her absence. Upon reunion, the older day care children exhibited a mixture of proximity and contact-seeking and resistance and avoidance. In general, the day care children showed more avoidant and resistant behaviors, which Blehar views as indicators of a disturbed attachment relationship.

As part of the research associated with the Cornell Infant Nursery, several preliminary comparisons were made of infants with and without extended day care experience in the first year of life (Ricciuti, In press). At about 12 months of age, infants who had been in the day care nursery and non-day care controls responded in a generally equivalent, neutral-to-positive manner when approached by a stranger in a strange room with mother present. Day care infants in one sample however, showed a somewhat more negative reaction than controls when the stranger approached immediately following mother's departure. This difference was attributed largely to the greater perceived incongruity or "strangeness" of this procedure for the day care infants, who had become accustomed to being left daily with a familiar caregiver in the familiar nursery environment. This interpretation was supported by other comparative observations indicating that the day care infants showed a considerably greater readiness than controls to move away from mother and approach a strange teacher and group of pre-school children in a naturalistic situation.

These studies underscore the difficulties of assessing effects of day care experience on infants' responses to strangers and to maternal separation, particularly because of the effect of variations in the social-cognitive context of the situation in which observations are made.

A more extensive study of infants in the Cornell Nursery (Ricciuti and Poresky, 1973; Ricciuti, In press) looked at longitudinal changes in infants' attachment to their caregivers, from about 3½ months of age through the end of the first year. Observations were made of infants' responses to the initial approach of the caregiver or a stranger, to being left by mother with the caregiver or with a stranger, and to being left with a stranger by the caregiver. The results provide considerable evidence that the familiar caregiver begins to play a significant role as an alternate attachment figure for the day care infant, particularly after 7 months. This is indicated by continued positive greeting responses to the caregiver through the end of the first year, and by the observation that being left alone by mother with the caregiver produced little or no distress reactions, until about 12 months. Even here however, these were moderate reactions, and the infants were much more distressed when the mother left them with a stranger. Under these circumstances, the return of the familiar caregiver substantially reduced the infants' discomfort. Finally, as they grew older, the infants showed the same pattern of increasing discomfort at separation from the familiar caregiver as they exhibited at separation from mother, when they were being left with a stranger.

The study just summarized was based on monthly observations made in a structured but naturalistic experimental situation in a special play room adjacent to the nursery proper. The present study was concerned with further longitudinal observations of the infants' reactions to being greeted by the

caregiver upon arrival at the nursery, and being left by the parent with the caregiver, on the basis of twice-weekly observations in the natural setting of the nursery foyer, where parents normally arrived with their infants. Also, this study was concerned with infants' reactions to reunion with the parent, on the basis of observations made in the nursery when the parent returned to pick up the infant.

The present investigators thought that observing these reactions longitudinally on a weekly basis would provide important information concerning the development of a relationship between the infant and the caregiver, as well as developmental data on the emergence of possible difficulties in separation from parent. Excessive distress at separation from the parent, or the absence of a positive greeting of the caregiver for a time could be of interest as a sign of possible disturbance in these relationships. In addition, the infant's greeting of the parent at the end of the day was considered an important source of information about the relationship, as suggested by Blehar's (1973) consideration of the behavior of the child when reunited with the mother. A generally positive greeting upon reunion would provide evidence of a strong, positive relationship, while a clearly ambivalent, neutral, or negative reaction toward the parent might be suggestive as a sign that the daily separation is having an adverse effect.

Of specific interest in this study were the effects of three different factors on the baby's greeting of the caregiver, reaction to being left by the parent, and response to reunion with the parent at the end of the day:

1) Changes over time

Generally speaking, in the child's early development he tends to become sensitive to separation from certain people toward the end of the first year. As previously indicated, Ricciuti and Poresky (1972)

found little evidence of distress at separation, and that which was observed occurred at twelve months, when infants showed a "moderately negative reaction" when left by the mother with the familiar caregiver. At an earlier age, distress upon separation occurred relatively infrequently. The investigators wondered if this same pattern of reaction to separation might occur also in a naturalistic setting.

2) Age of entry in day care

There are two major points of view about the optimal age of entry of very young children in day care. Some people feel that participation should begin after the baby is six months old, at which time the mother and infant are likely to have established a close attachment. The initial transition to day care at age 6 - 7 months, however, may be more difficult than for a younger baby, since a 6 month old can clearly differentiate familiar and unfamiliar people and may react negatively to those people he does not know. Regular separations before around six months of age, however, are thought to have possible negative effects on the formation of this mother-infant relationship. Other people argue on the other hand, that earlier entry, before strong attachments are formed, is more likely to ensure an easy transition for the infant from care by the mother to care by someone new. This latter group does not view this early day care experience as being likely to disrupt seriously the formation of the attachment relationship, provided stable caregivere are available as alternate attachment figures.

3) Half day care versus full day care

The previous longitudinal study in the Cornell program (Ricciuti, In press; Ricciuti & Poresky, 1973) had involved only babies who were in day care for a maximum of 4 hours each day. A question of interest in the present study was whether the general impact of separation might be greater when that daily separation was of longer duration (8 hours).

It had been the hope of the investigators to trace through this procedure the baby's initial recognition of the caregiver and the development of a relationship with her. However, the observations did not begin until December, and by that time each infant had been in the program for at least two months and was therefore already familiar with the caregiver.

The study was an informal one with a small number of subjects, and was intended to offer preliminary data and suggestions about the effects of day care experience on the infant's attachment behavior with parents and alternate caregivers, as reflected in his behavior during daily greeting of the caregiver, separation from the parent, and reunion with the parent.

PROCEDURE

Subjects

Ten infants (7 girls, 3 boys) enrolled in the Cornell Infant Nursery were observed. Six of the infants attended the program five days a week for approximately 8 hours a day, and four of them participated approximately four hours daily, two attending in the morning and two in the afternoon. The infants entered the program in September and October, 1972, when they were between 2 and 6 months of age. They were observed for the duration of their participation in the program, which for most of them lasted until late June or July

1973. The infants came from middle class families, and parents worked or were students on a full or part-time basis.

Care for the infants was provided by three female caregivers, whose working hours were staggered over the day so that two caregivers were in the nursery with eight infants at any given time. Each baby had one of the caregivers primarily responsible for his or her care. However, when the infant became familiar with the other two caregivers, all of them participated in the care of all the infants.

Arrivals

Beginning in December 1972 when all the babies had been attending the program for at least 2 months, the infant was observed twice weekly as he arrived in the entryway to the nursery with his parent and was greeted by the caregiver.[1] A schedule for arrivals was set up so that the infant was observed on the same two days (not necessarily consecutive) each week. Generally, the procedure on these days was not unlike daily arrivals, when the infant also came to the entry area to be undressed by the parent and then was taken into the nursery to be greeted by his caregiver. The baby was observed with either mother or father and was greeted by the same caregiver whenever possible.

The procedure was standardized as much as was possible while retaining the naturalistic quality of the sequence. The arrival procedure is described briefly as follows:

a) The infant and parent arrive, and the parent undresses the baby and puts his belongings away. When the parent and baby are ready, the observer (behind a one-way mirror) alerts the caregiver. The parent, holding the baby on his or her hip, knocks on the door and steps back about three feet.

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[1] Marilyn Kaufman and Lee Lopez were the observers for this study along with the 1st author. Ms. Lopez and Jeanette Valentine analyzed the data. Their help is gratefully acknowledged.

b) The caregiver opens the door and greets the baby and parent briefly. (Far Greet)

c) The caregiver steps closer to the parent and baby, talks again to them, holds out her arms, and takes the baby. (Near Greet)

d) The parent comes close, touches the baby on the arm or hand, tells him goodby, and leaves.

The length of the episode varied, depending on how much the caregiver and parent had to say to each other, but the average length was around one minute.

Departures

The departures were not structured at all - that is, no instructions were given to either the parents or the caregivers. The observer watched the infant's reaction to the parent's approach at going home time each afternoon until she had two observations for each baby for the week. The baby's reaction, of course, was influenced partly by the kind of greeting he received from the parent. Observers coded the parent's greeting as Far Silent, Far Talk, Near Silent, Near Talk, Touch Talk, Other. A greeting by the parent might consist of more than one of the above segments. The baby's reaction to each of these segments as they occurred was rated by the observer. In most instances only one or two ratings were involved.

Observation and Measurement

For each segment b-d of the arrival sequence, an observer rated the infant's affective responses on a pleasure-displeasure continuum and their visual and manipulative-postural-locomotor responses on an approach-withdrawal continuum. The Visual (V) and Manipulative-Postural-Locomotor (M-P-L) scales are described in the appendix. The affectivity scale consisted of nine

points, reflecting the intensity of the infant's pleasure-displeasure or hedonic responses, based primarily on facial expression and vocalizations. Since most of the data reported on in this paper come from the ratings of Affectivity, the scale is presented in the appendix as it was used by observers.

Observers were allowed to indicate that a rating on a particular scale for a certain segment was not given (because she did not see it, the timing was fast and a segment may not have occurred).

Observer Reliability

Three different observers were used, since observations were made at the beginning, middle, and end of each day. One observer rated each arrival and departure episode. Several checks of reliability were made during the year. These checks consisted of each of the two observers pairing with the third at separate times, and rating six arrival episodes involving different babies. Ratings were made by the pair of observers on the 3 scales for Far Greet, Near Greet, and Parent Leave. Percent agreement, defined as ratings within one number of each other, was calculated on the 18 pairs of ratings. Reliability was generally quite high (96 and 94 percent on the initial check).

Analysis

For the arrival sequences, monthly averages were obtained for each child for Far Greet, Near Greet, and Parent Leaves, based on the total number of observations in those categories for the month. These individual averages were based on as many as 9 observations, and as few as one (in a single instance). Most averages were based on 5 or 6 ratings. The monthly averages for Far and Near Greet for each child were combined to arrive at a single monthly greeting score for each child.

For the departures, monthly averages were based on approximately 1 to 8 observations. To obtain a single daily rating upon which to base an average, if a baby received more than one rating on a scale, the highest rating was used in computing the average.[1]

RESULTS

Separate analyses were carried out for the following four sets of data:

Arrivals at nursery

1) Infant's affective responses to being greeted by the caregiver upon arrival at the nursery. This analysis combined the Far Greet and Near Greet ratings of affectivity.

2) Infant's affective responses as the parent departs, leaving the infant with the caregiver.

Departures from nursery

3) Infant's affective responses when approached by parent at end of daily session, preparatory to departure from nursery.

4) Infant's manipulative-postural-locomotor responses (M-P-L ratings) in same context as (3) above.[2]

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[1] The rating system allowed for an infant to receive two different ratings on a given scale within a particular segment if his behavior showed both positive and negative components. These "mixed" ratings were handled as follows for computational purposes: if the infant showed strong or moderately strong positive and negative responses (eg, +3, -3; or +2, -2) in the same segment these ratings were not averaged but the infant's responses were labelled as "mixed". (These ratings were not used to compute monthly averages.) If a rating of +2, +3, or +4 was accompanied by a -1, the value of the predominant rating was used, ignoring the -1. In instances such as +4, -2 the predominant rating was used, but reduced by 1. If the positive and negative ratings were both minimal (+1, -1) they were averaged to yield the neutral rating of zero.

[2] The M-P-L ratings were not analyzed for the arrival situation, since inspection of the data indicated that they revealed little useful information beyond that already provided by the affectivity ratings.

In each of the four analyses just listed, average monthly ratings were plotted as a function of the infants' age at the time of observation, over the age span from 5 to 15 months (Figures 1-4). As previously indicated, all ten infants entered the nursery program during a 3-week period in the early fall of 1972, and their ages at entry varied from 2 to 6 months. Also, six of the infants were enrolled for full-day sessions, while four infants attended the nursery for half-days, in both instances on a daily basis.

Although the sample size was very small, in order to permit some examination of differences associated with age of entry into the nursery, and with full-day versus half-day enrollment, for each analysis the monthly ratings were plotted separately for the following sub-groups of infants:

A) the four half-day infants, who entered the program when they were between four and six months of age (average 5.1 months), and thus were somewhat <u>older</u> babies;

B) three full-day babies who entered the nursery at approximately the same age (average 4.7 months), and thus represented a comparably <u>older</u> group; and

C) three full-day, <u>younger</u> babies entering the nursery at the average age of 2.7 months.

Thus, examining the curves for groups A and B permits comparisons of the responses of half-day and full-day infants who entered the nursery program at a comparable age (approximately five months). Similarly, the curves for groups B and C, all full-day infants, can be compared for possible differences associated with <u>earlier</u> versus <u>later</u> age of entry into the nursery (2.7 versus 4.7 months, on the average). Comparisons of groups A and C are less readily interpretable, since they differ on both characteristics under discussion. Finally, it should be emphasized that sub-group differences in age at entering

the nursery also reflect differences in length of time in day care. Thus, at any given age, the full-day, younger group (C) has been in day care approximately two months longer than either of the older groups.

Observations began in December, 1972, several months after the infants entered the nursery. Hence, at the earliest ages for which mean ratings could be plotted (5 and 6 months) data are available for group C only (full-day, younger). Similarly, there are fewer infants represented at 14 and 15 months, since several infants left the program a month or so before closing of the nursery at the end of July, 1973.

Arrivals at nursery

Figure 1 presents the average monthly affectivity ratings for groups A, B, and C from 5 to 15 months of age, indicating the nature of the infants' affective responses when greeted by the caregiver in parent's presence upon arrival at the nursery. The curves portrayed in Figure 1 indicate pretty clearly that at all ages and in all three groups the infants' responses were primarily positive or neutral. The only exception was the moderately negative average rating for group B at 10 months, for which there seems to be no ready explanation. The generally positive nature of the infants' reactions to the caregiver is also confirmed in the maximum and minimum ratings shown by individual infants at each age, presented at the bottom of Figure 1. In only three instances was the lowest average rating for an infant on the negative side of the scale: at 10 and 15 months in Group B (full-day, older entry age), and at 13 months for Group A (half-day, older entry age).

With respect to age changes, there appeared to be a rather slight tendency for responses to become somewhat less positive or neutral as the infants approached the 12 to 15 month period. Since the first observations

were made at 5, 6, or 7 months of age, after the infants had been in the nursery for several months, there was no evidence of the gradual buildup of positive reactions to the caregiver one might have expected to see if the infants had been observed during the early weeks of enrollment in the nursery, as they became familiar with the caregiver.

Insofar as group differences are concerned, Figure 1 reveals that throughout the age span covered, the most positive responses were consistently shown by the half-day older babies (Group A), while the least positive reactions occurred in the full-day older infants (Group B), who also produced most of the few observed negative responses, as already indicated. It is interesting to note that the full-day younger babies (C) were consistently more positive than the full-day older infants (B), but less positive than the half-day babies (A). Thus the curves suggest a relatively consistent gradation, with the most positive responses being shown by the half-day infants, while the full-day babies entering the program earlier (at 2.7 months) were more positive than those entering two months later (at 4.7 months).

The infants' affective reactions to the parents' departure and being left with the caregiver are shown in Figure 2. The half-day and the full-day younger groups (A and C) showed essentially no negative reactions to parental departure, even at 10 to 15 months, when one might expect to see some separation distress. It will be noticed that in these two groups there was only one instance of a negative minimum rating for a particular infant, at 13 months in Group A. On the other hand, the full-day older-entering babies (B) showed generally less positive responses than the other two groups, as was the case for greeting responses, and they gave moderately negative reactions, on the average, at several points, particularly at 9, 10, and 14 months. Thus, in the case of both the caregiver greeting and the parental

departure situations, the full-day older infants showed the least positive or most negative reactions relative to the full-day younger and half-day groups.

Departures from nursery

Figures 3 and 4 present the average affectivity ratings and the ratings of manipulative-postural-locomotor reactions shown by infants on the parent's return at the end of the daily sessions, preparatory to taking the infant home. The two sets of curves are quite similar, with none of the consistent group differences previously revealed in the analyses of the arrival ratings. Insofar as the affectivity ratings are concerned (Figure 3), it is quite obvious that the infants' reactions upon parents' return are clearly and markedly positive, becoming increasingly so by the end of the first year. There was only one average rating for a particular infant which was very slightly negative (-.20), in the half-day group at 7 months. It is interesting to note the decline in the magnitude of the positive reactions following the peak at 12 months in the case of the half-day and full-day older groups, particularly the latter. A possible explanation of this attenuation in positive reactions to the parent's return noted at 13 to 15 months will be offered in the subsequent discussion.

The M-P-L ratings indicated in Figure 4, which are also consistently positive, show a somewhat sharper increase in magnitude from 5 to 12 months than that shown by the affectivity ratings. Here too, there is a rather marked reduction in these positive responses following the peak at 12 months, in the case of the half-day and full-day older groups. Not a single infant showed a negative average rating indicating a tendency to withdraw from the parent, in any group or at any age.

DISCUSSION

Arrivals

In general, the babies reacted in a clearly positive or neutral way to being greeted by the caregiver and separating from the parent. This absence of marked negative reactions supports the point of view that coming to a day care center, if managed carefully, is not necessarily a traumatic part of a young child's experience. For the combined Near and Far Greet sequences, there were only 5 individual monthly ratings which were negative, four of these occurring in Group B (3 at 10 months, 1 at 15 months) and one in the half-day group (at 13 months). For the group as a whole, there were relatively few negative reactions to the parent leaving, with the majority of the exceptions occurring in a particular sub-group (to be discussed later).

For the group as a whole there were no major age trends, except for a slight tendency toward somewhat less positive reactions with increasing age in greeting the caregiver. As previously mentioned, the increase in positive response which may have occurred as the caregiver became familiar to the infant was not documented in this study, since observation began at least two months after the babies began coming to the center. The data in this study are generally compatible with the findings reported by Ricciuti and Poresky (1973), and Ricciuti, In press. The relatively little distress shown when the infant is left with the caregiver is largely attributable, in our view, to the stability in the relationship between the familiar caregiver and the baby -- the fact that she was one of three people who cared for the baby each day. We would expect to find more distress, after 7 months of age or so, in a similar situation if there were less stability in the caregiving arrangement and the infant were being left with unfamiliar caregivers.

In comparing these findings with the previous study done in the Cornell Nursery, which involved half-day babies only, it is interesting to note that both the half-day (A) and full-day younger (C) groups in the present study showed even less evidence of distress at maternal separation than was found in the earlier investigations. Also, we found no evidence of the emergence of moderately negative reactions at 12 months, as found previously. These differences are perhaps due to the more naturalistic procedures and more familiar setting for the observations of this study.

In looking at differences between the three groups of babies, one is struck by the fact that both in greeting the caregiver and in reacting to the parent leaving, those babies who were somewhat older (4 to 6 months) when they entered day care and attended on an all day basis (Group B) consistently reacted less positively or with more distress than the other two groups. It is striking that for both the Greeting and Parent Leaving segments at all ages the B group showed less positive or more negative responses. There were 13 negative individual monthly ratings for Parent Leaving, and 12 of these came from the B group (5, 4, and 3 ratings from each of the three older all day babies). As previously mentioned, four of the five individual negative ratings for the greeting situation also occurred in Group B. It is acknowledged that the sample is small, and interpretations must be made cautiously. However, the data suggest that entry into full day care at 4 to 6 months of age or later may result in a somewhat more difficult transition than if entry occurs before 4-6 months.

As was mentioned earlier, the three babies in Group B contributed negative monthly ratings almost equally. However, in all the groups there was considerable variability in which individual babies contributed the highest

and lowest ratings each month. There were two exceptions to this: in the half-day group one baby received the highest rating in 6 of the 8 months in which he appeared. This same baby received negative ratings for Arrivals on only two daily observations over the entire time he was observed. Also, one baby in the older all day group (B) received many more mixed positive and negative ratings than any of the other babies (28 during a five month period, as compared with 8 and 6 mixed reactions during the same age period for the other two members of Group B). Most babies in each of the groups, however, tended to show occasional mildly negative reactions on particular days. These facts lend some support to the assumption that contrasts between groups may be due primarily to the age and full day-half day contrast rather than to characteristics of particular infants. There were some individual differences in general styles of reacting observed, however -- in amount of affect shown and the way of showing it -- and one would expect to find that some babies might have much more trouble adjusting to day care than others regardless of age of entry and time in day care. The possibility of group differences being due to caregivers is small, since the caregivers' work schedules necessitated that the majority of observational sessions for 8 of the babies involve one caregiver, while a second caregiver consistently greeted the other two babies. In all cases the caregiver was one who was in the nursery most of the time the baby was there.

It is difficult to make any judgments from these data about the relative importance of amount of time daily spent in day care versus age at which the day care experience begins. Although the half day older group (A) had the most positive ratings in greeting the caregiver, the all day younger babies (C) generally received the more positive ratings for Parent Leaving. The half day older group did rate slightly higher on affective reaction to the

parent's return at the end of the day, but the difference is too small to take this as evidence that the length of daily separations is a more important factor than age of entry. The lower arrival ratings of Group B at all points suggests that in addition to having stability and familiarity in the care-giving arrangement, entry into day care at a younger age makes the transition and daily separations easier.

Departures

The babies' reactions to being greeted by parents at the end of the day contrasts in two ways with their greeting of the caregiver upon arrival: 1) there is a slight but clear increase up to twelve months in both Affectivity and M-P-L ratings, and 2) there are no major differences between groups up to twelve months.[1]

The increase in positive reaction with age, not found in the greeting of the caregiver, may reflect an increased capacity to show affect, or it may be evidence of a stronger attachment relationship developing between the infant and parent. While some people might interpret the decline in positive responses beginning at 12 months as evidence of some disturbance in the parent-infant relationship, there is no real evidence to support that conclusion. Rather the observers' impression was that around a year of age, the babies were beginning to show more autonomy, and while they continued to acknowledge the parents' return in a positive way, if they were involved in an activity they might not stop what they were doing to greet the parent in a highly expressive way. Also, the parent's approach to the infant at departure time

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[1] The absolute value of departure affectivity ratings may be higher than arrival ratings in part because in the former, if more than one rating was given (this occurred relatively infrequently), only the highest rating was used to compute the average. In the arrival sequence, ratings for Far and Near Greet were averaged.

occurred outdoors more frequently when the babies were older, and here the space was larger and there were more distractions. There was no evidence of any increase in frequency of mixed, ambivalent or negative responses. It is interesting to note that at 12 months when the groups begin to diverge, the older all day group (B) declines in Affectivity more markedly than do Groups A and C, an additional sign that this group may be having more problems with the separation than the other groups.

The critical importance of stability and continuity in the people giving care to babies outside the home has been supported. Even with that stability and continuity, there was evidence of some moderate difficulty in separating from parents for babies who were in day care all day and entered when they were 4 to 6 months old rather than two months earlier. The observations made in this study were of 2 specific situations, and do not allow any inferences to be drawn about the nature of the attachment relationship between the infant and parent without other kinds of evidence. Entry into day care at a younger age and a shorter daily separation are indicated as factors which may facilitate the baby's daily adjustment to day care. This work was only a small pilot effort, and many more studies are needed which will focus on the effects of day care on the infant-mother relationship, specifically on the effects of early and later admission and all day versus half day participation.

Appendix

Affectivity Scale

+4 sustained smiling accompanied by positive vocalizations (coos, gurgles, squeals), or activity bursts, or strong postural or reaching (M-P) responses, while visually oriented toward person (V).

+3 sustained, broad smiling and visual orientation, without positive vocalizations or activity increases; or sustained positive vocalizations and visual orientation without sustained smiling; or sustained M-P approach behavior accompanied by intermittent smiling or positive vocalizations.

+2 intermittent broad smiling or sustained moderate smiling, without positive vocalizations or M-P responses; or intermittent moderate smiling and occasional positive vocalizations or M-P responses.

+1 occasional or infrequent smiling; or occasional positive vocalizations (unaccompanied by other positive responses in each case).

0 Neutral affectivity -- absence of clear positive or negative cues in facial expression or vocalizations; facial expression may be neutral, sober-attentive, or animated (not smiling).

-1 occasional distress (pre-cry) face; or infrequent whimper (in each case without other negative cues).

-2 intermittent facial distress or intermittent whimpering, without other negative cues.

-3 sustained facial distress, with some whimpering or negative M-P response; or intermittent distress face, with some whimpering and mild negative M-P responses.

-4 sustained crying, with or without other negative cues; or intermittent crying with clear V or M-P avoidance; or strong V or M-P avoidance with intermittent whimpering and facial distress.

It should be noted that a sober-attentive or serious facial expression was rated as neutral affectively, rather than negative, as is the case in some studies.

Visual (V) and manipulative-postural-locomotor (M-P-L) directionality

These are both nine-point scales, indicating the extent to which the infant's responses in the particular modality reflect stimulus maintaining, stimulus seeking, or "approach" behaviors on the one hand, or stimulus terminating, stimulus avoiding, or "withdrawal" behaviors on the other. Scale values run from +4 for maximum approach behavior, through a midpoint of 0, to -4 for maximum withdrawal or avoidance. Thus, a rating of +4 would indicate sustained visual fixation directed to the target person for essentially the entire segmental unit of observation (V); or sustained reaching and definite postural or locomotor inclination toward the target person (M-P-L). A -4 rating (V) would indicate sustained visual avoidance (rarely observed), or pronounced, persistent withdrawal of hands or arms, postural inclination

of body away from target person or moving away from the target person (M-P-L). A zero rating would indicate an absence of any approach or withdrawal behaviors.

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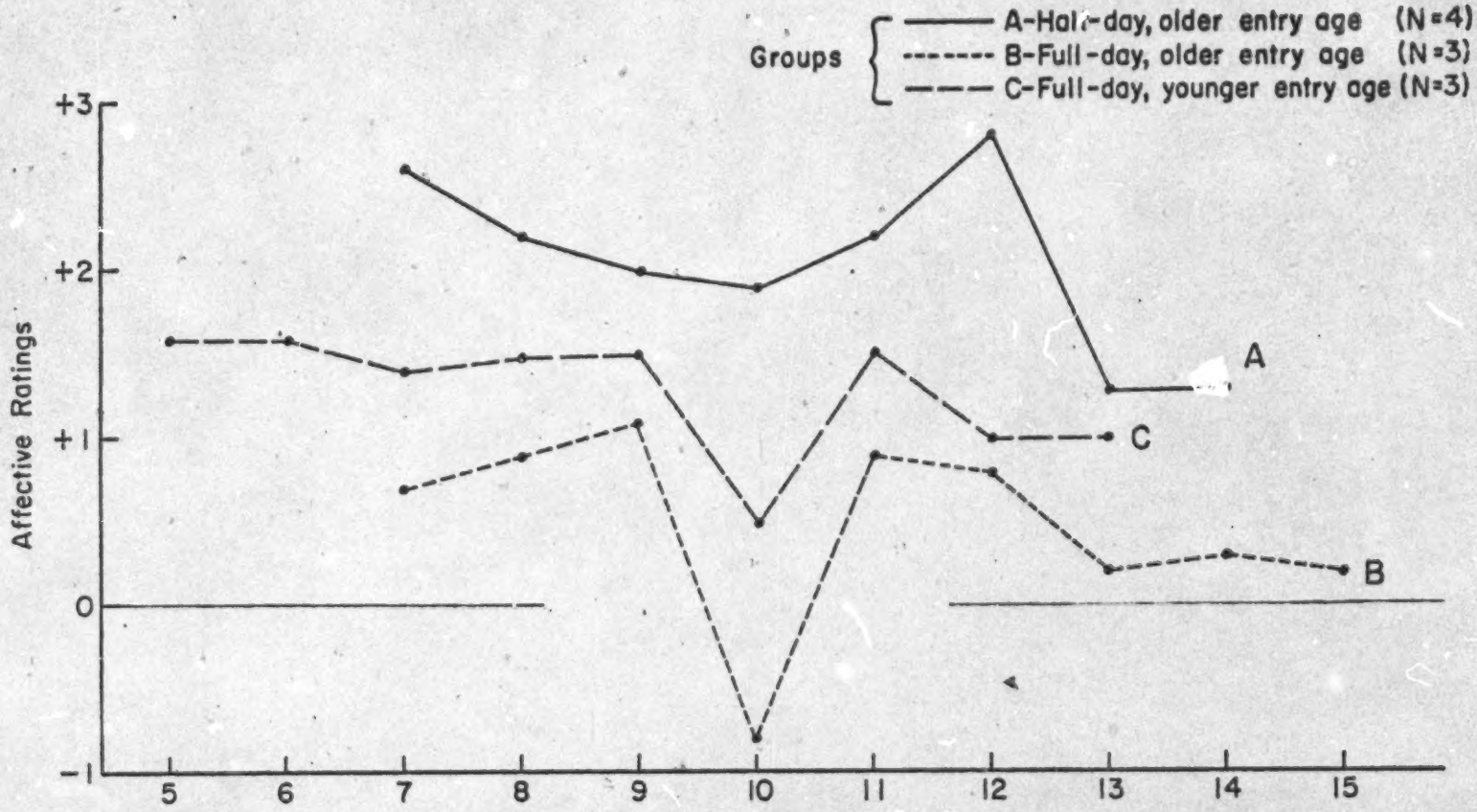
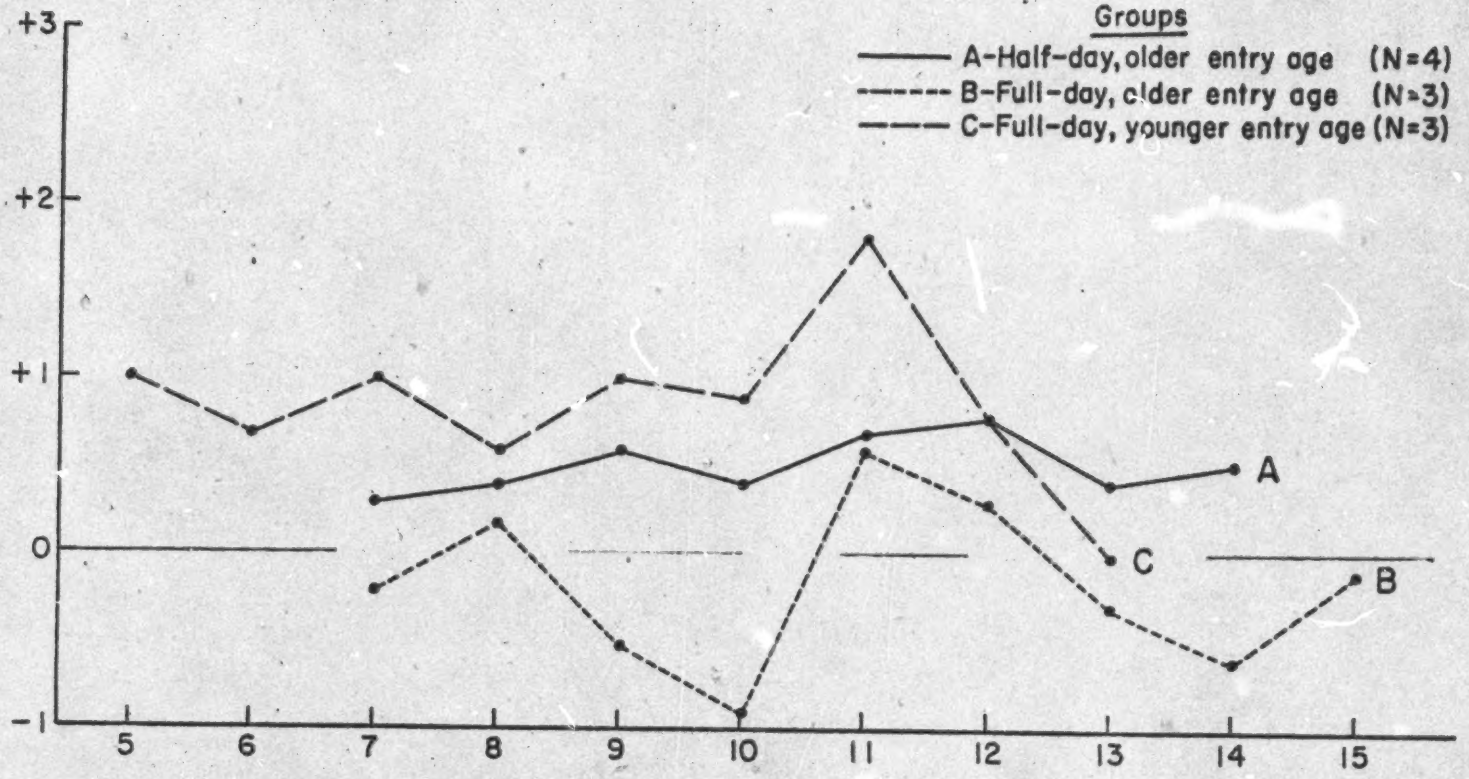
Figure 1
Arrival at Nursery: Mean Affective Responses to Greeting by Caregiver



Highest and lowest individual ratings:

Max.	A			2.7	3.7	3.6	3.3	4.0	4.0	4.0	2.4
Min.				2.5	1.3	.3	.8	1.2	2.3	-.75	.2
Max.	B				1.0	2.4	-.5	2.2	1.3	.4	.4
Min.					.9	.3	-.9	.1	.1	.1	.1
Max.	C	2.6	1.8	1.5	1.7	2.8	.6	2.5	1.0		
Min.		.6	1.3	1.2	1.2	.7	.4	.4	1.0		

Figure 2
Arrival at Nursery: Mean Affective Responses to Parent's Leaving

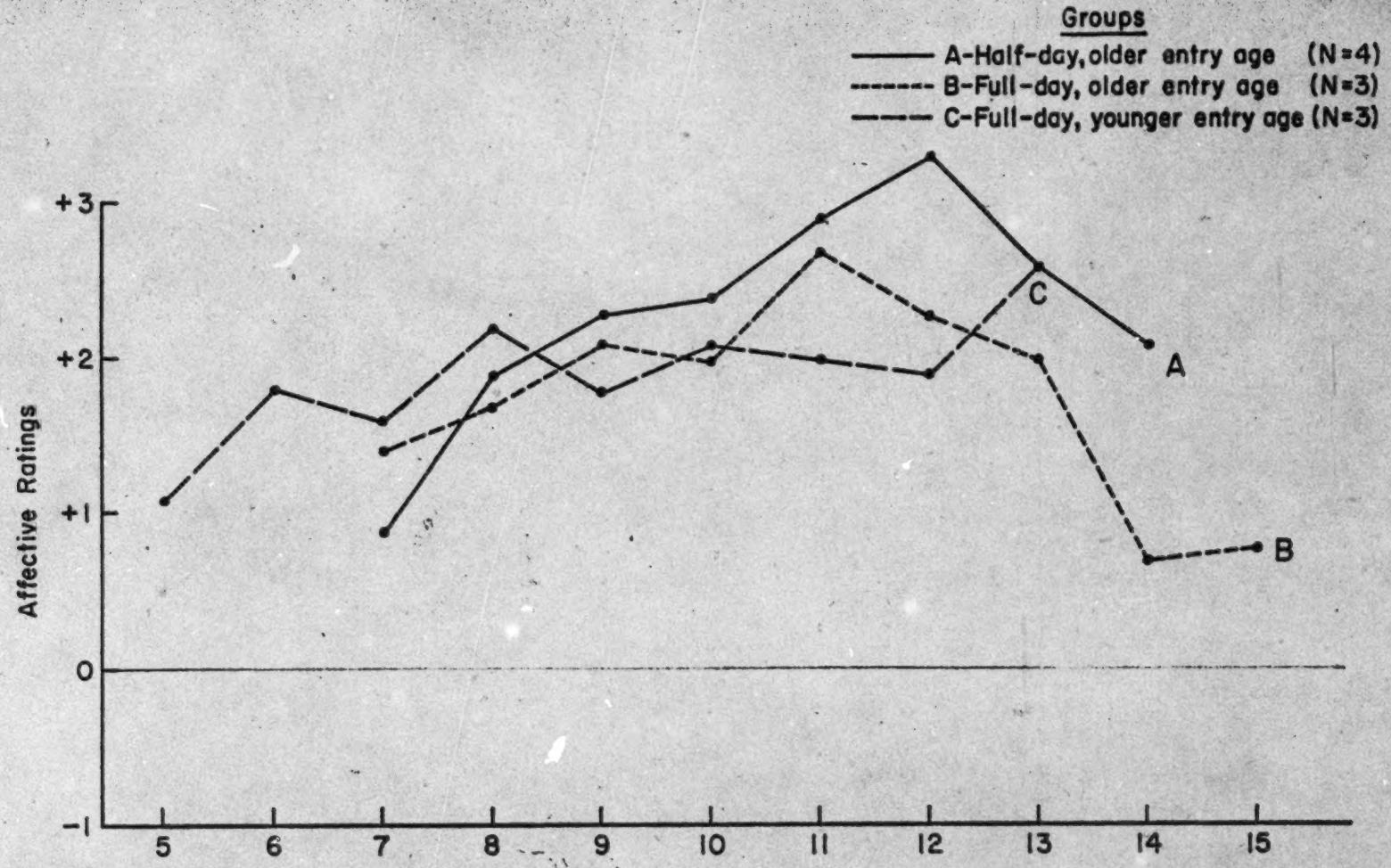


Highest and lowest individual ratings:

Max.	A				.7	.8	1.1	1.3	2.1	2.3	2.5	1.0	
Min.					0	.2	0	.1	0	0	-2.0	0.0	
Max.	B					.2	-.4	-.2	1.2	.6	.3	.1	.6
Min.						.1	-.6	-1.5	-.2	0	-1.0	-1.4	-.7
Max.	C	1.1	1.3	1.4	.9	1.4	1.3	2.0	1.7				
Min.		.8	0	.5	0.0	.6	.5	1.7	0				

Figure 3

Departure From Nursery: Mean Affective Responses to Parent's Return at End of Day

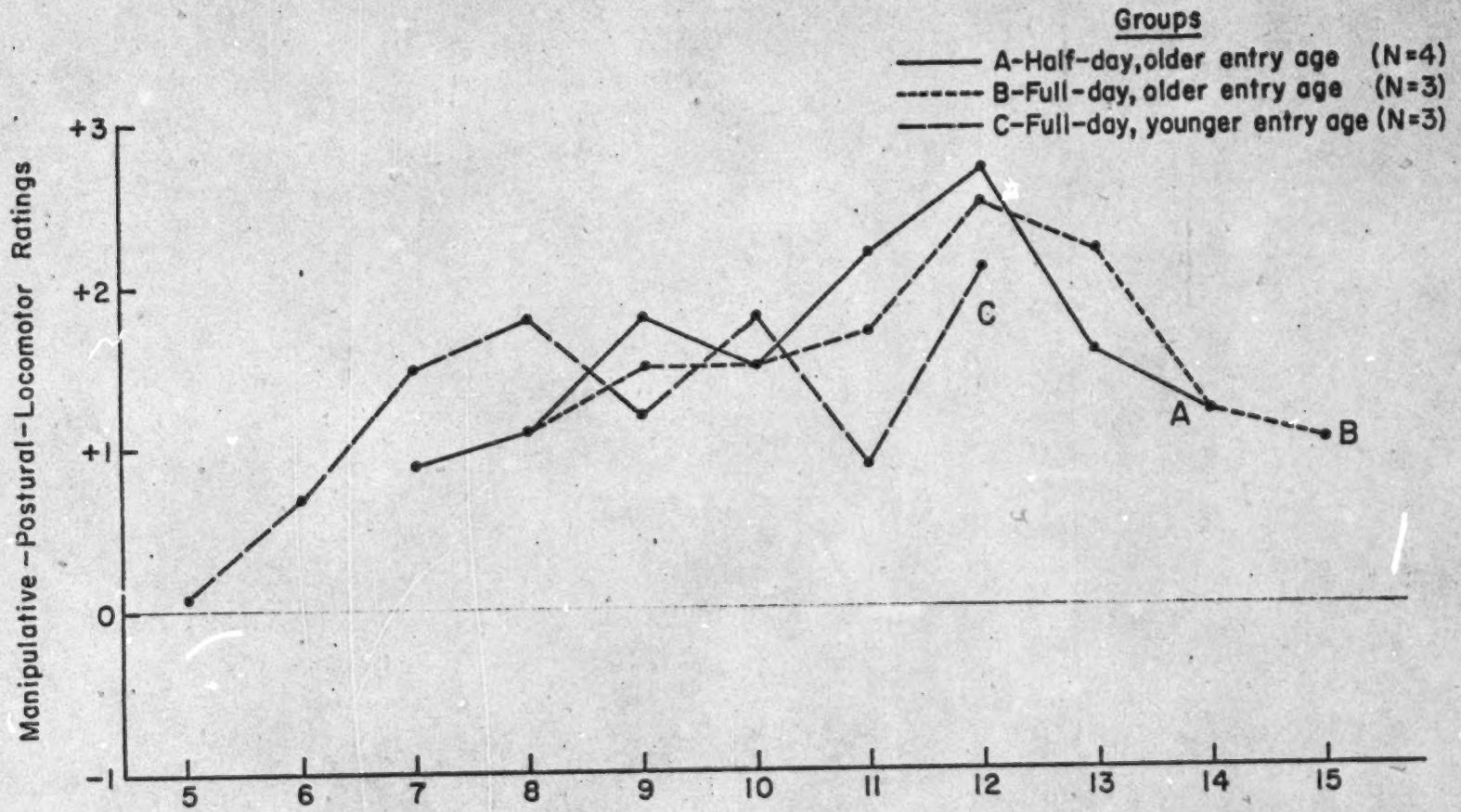


Highest and lowest individual ratings:

Max.	A			2.0	3.0	3.1	3.2	3.8	4.0	3.8	2.2	
Min.				-.2	.8	1.5	1.2	2.1	2.9	2.0	2.0	
Max.	B				2.7	3.0	2.0	3.0	3.0	2.6	1.4	1.6
Min.					.6	1.1	2.0	2.1	1.2	1.4	0	0
Max.	C	2.2	3.1	2.6	3.0	2.7	2.7	2.3	3.0			
Min.		0	.5	1.1	1.7	1.4	1.4	1.6	.7			

Figure 4

Departure From Nursery: Mean Manipulative – Postural – Locomotor Responses to Parent's Return at End of Day



Highest and lowest individual ratings:

Max.	A			1.8	1.8	2.5	2.0	3.2	4.0	2.5	2.4	
Min.				0.0	.7	1.4	1.0	1.4	2.0	.6	0	
Max.	B				1.6	1.6	2.0	2.2	2.8	3.3	1.9	2.0
Min.					.6	1.4	1.2	.9	2.1	1.0	.5	0
Max.	C	.2	1.0	2.6	2.4	2.9	2.5	1.6	3.5			
Min.		0.0	.4	.4	1.3	.3	1.1	.2	.7			